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No. 86. N. SER.] JUNE, 1862. [No. CCXLIV.

THE
PHYTOLOGIST.

A BOTANICAL JOURNAL.

Ὡς ἐμεγαλύνθη τὰ ἔργα σου, Κύριε!—πάντα ἐν σοφίᾳ ἐποίησας.
ΨΑΛΜ. ργ΄. 24.

Benedicite universa germinantia in terra Domino; laudate et superexaltate Eum in secula.—*Hymn. iii Pueror. v.* 76.

LONDON:
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London, June, 1862.

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W. PAMPLIN, BOTANICAL AGENT, 45, FRITH ST., SOHO, LONDON.

[*June*, 1862.]

NOTES ON A FEW NORTH LANCASHIRE PLANTS.

By C. J. Ashfield.

Anemone Pulsatilla.—I never heard of this beautiful plant having been found in the county of Lancaster previously to reading the article published in the January number of the 'Phytologist' for the present year, entitled "Catalogue of Plants Cultivated by Collinson." I have recently written letters making certain inquiries about the plant, which have been published in the 'Lancaster Guardian' and 'Preston Chronicle' newspapers, but have received no replies thereto. I cannot even ascertain the whereabouts of the "Little Purton" referred to. I have consulted maps of the county of various dates, from the latter part of the last century to the time of, and including the Ordnance map, and find no such place named in any of them. I have not botanized much in the neighbourhood of Lancaster, but if circumstances permit, I shall take a trip thither during the present season, in search of *A. Pulsatilla*.

Cineraria palustris.—Ray describes this plant as growing plentifully in watery ditches about Pilling Moss, in Lancashire; to use his own words:—"Copiosissime autem in fossis aquosis circa paludem Pillinmosse dictam in Lancastriâ." I have many times botanized over Pilling Moss, or rather the remains of it, but have never been fortunate enough to find the *Cineraria*. The Moss is quite changed in its character since the time of Ray, great part of it being now in cultivation, and the *Drosera, Andromeda, Sphagnum*, and many other families of marsh plants having been succeeded by plentiful crops of Wheat, Oats, etc. I have heard that the late Mr. Kenyon, a schoolmaster and botanist, formerly residing in Preston, found the plant in question on the Moss about twenty years since, but I cannot learn with any degree of certainty that he did so. I have not given up all idea of finding it, and hope to have another search for it during the ensuing summer.

Lathræa squamaria.—Gerarde says of this plant, "It groweth likewise neere Harwood, in Lancashire, a mile from Whanley, in a wood called Talbot Banke." Mr. George Ward, an aged botanist residing near Blackburn, told me last summer that he had found the plant about thirty-five years since, on the bank of the river Calder, about a mile from Whalley. I have much plea-

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sure in being able to confirm the statements of the above-named botanists of the seventeenth and nineteenth centuries, I having during the present month found the plant growing abundantly in the township of Billington (adjoining that of Harwood), about a mile from Whalley, nearly opposite Moreton Hall, and within four or five yards of the river Calder. No doubt this is the spot indicated by Gerarde, it agreeing with his statement in every respect, except as to the names "Whanley" and "Talbot Banke." The first is evidently a misprint for Whalley, or, as the same author has it in his notice of *Tragopogon porrifolius*, "Whawley." As to the second name, I have made many inquiries as to whether there was a wood in the neighbourhood called Talbot Bank, but no one knew of such a wood, and said "Whalley Banks" must be the place referred to, and that is the name of the wood in which the plant is now growing.

Maianthemum bifolium.—I was aware of Gerarde's notice of this plant growing "in Dingley Wood six miles from Preston and Aundernesse, and in Harwood nere to Blackburne likewise," previously to reading the remarks thereon in the 'Phytologist' of October last (vol. v. p. 318). There is a place called "Dinckley," near Ribchester, about ten or twelve miles from Preston, and I believe there is a wood there called "Dinckley Wood." This must be the wood referred to by Gerarde; at least I know of no place near Preston called "Dingley," or anything like that name, except the above-named Dinckley. The Dinckley referred to is near Harwood, also mentioned by Gerarde. I have never searched Dinckley Wood, but hope to do so next summer.

Primula farinosa.—Gerarde says that "these plants (*i.e.* Red Bird-eyne and White Bird-eyne) grow very plentifully in moist and squally grounds in the North parts of England, as in Harwood neere to Blackburne in Lancashire, and ten miles from Preston in Aundernesse." I cannot exactly confirm the old botanist's statement as to the above habitat of this beautiful plant, but I found it growing plentifully last year near the foot of Pendle Hill, not far from Pendleton Hall, and only a few miles from Harwood. The Mr. Ward before mentioned tells me he has found it very near to, if not actually in the township of Harwood.

Preston, April, 1862.

THE REV. THOMAS MARTYN AND THE SURREY LIST OF PLANTS.

The Rev. Thomas Martyn, to whom we are indebted for the List of Surrey Plants published in Manning and Bray's 'History of Surrey,' was the Regius (Royal) Professor of Botany in the University of Cambridge, and also Vicar or Perpetual Curate of Edgeware, in Middlesex. He was the eldest son of the celebrated Dr. John Martyn, who was also Professor of Botany in the same University, and of whom more anon.

Professor Thomas Martyn was born in 1735, in Chelsea, and succeeded his father, Dr. John Martyn, in the Professorship, which the latter resigned in 1761, when he retired from the more active employments of life.

The Rev. Thomas Martyn was, like his father, devoted both to literature and to science. In 1763, he published 'PLANTÆ CANTABRIGIENSES,—a Catalogue of the Wild Plants of the County of Cambridge;' and in 1771 a *Catalogue* of the Contents of the Botanical Garden of Cambridge; also his 'FLORA RUSTICA,'—a work containing descriptions and illustrations of such plants as are either useful or injurious in husbandry,—a useful treatise. Another practical work by the Professor, is a Translation of the celebrated J. J. Rousseau's 'Letters on Botany.' More than one edition of this work have appeared. The second is dated 1787.

The Professor was also editor of 'Miller's Gardener's Dictionary,' perhaps the most useful and popular horticultural work which has ever appeared. It is the source from which Dr. Johnson, our great lexicographer, derived the botanical information scattered here and there in his excellent Dictionary of the English language.

This celebrated botanist and amiable man, to whom science owes much, was a native of Chelsea, where his estimable father was in practice as a physician. Dr. Martyn the elder was an amateur botanist, and an excellent scholar; his translations of Virgil's Eclogues and Georgics are lasting monuments of his classical erudition and botanical attainments. His versions of this author, the greatest of the Latin poets, are the only English translations of the classics in which the botany of the ancient poets has been satisfactorily expounded.

The Rev. Thomas Martyn was the author of many works of higher pretensions than his catalogues of wild and cultivated plants; he was celebrated as a connoisseur or a critic in the fine arts. His tours in France, Switzerland, and Italy, abound in artistic critiques, and it is not improbable that his work on Italy was the model on which the eminent Sir J. E. Smith composed his celebrated 'Tour on the Continent.'

The prince of British botanists highly commends the work of his predecessor, "as containing an ample catalogue of works of art, with characteristic remarks, both concise and discriminative." He concludes his brief notice of this work with these words:—"The amiable author, content with being useful, has left unattempted what is esteemed more brilliant, viz., fame, though undoubtedly at his command. A habit of penetration and discrimination, with a facility of clear communication, acquired by the systematic study of nature, are remarkably displayed in this performance."

Our author also published 'Elements of Natural History,' and a work called 'The English Connoisseur,' or an account of the artistic curiosities "in the palaces and seats of the nobility and gentry of England."

Besides the curacy of Edgware, he held the livings of Luggershall, and Little Marlow, in Bucks, and ultimately that of Pertenhall, in Bedfordshire, where he died in 1825, at the advanced age of eighty-nine.

SURREY PLANTS.*

A Catalogue of the more rare Plants found wild in the county of Surrey. By Professor Martyn, of Cambridge (from Manning and Bray's 'History of Surrey.')

NAME.	LOCALITY.
1. *Hippuris vulgaris.*	Thames side.
2. *Salvia verbenaca.*	Guildford, Morden, Effingham, and Great Bookham.

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* "For the following list of the indigenous Plants of *Surrey* the present Editor is indebted to the liberal and spontaneous communication of Mr. Professor Martyn, of *Cambridge*, whose skill in the Science of Botany has been long known to the world. It was accompanied with a most obliging letter; in which he says, that, at the close of the Preface to the Second Volume of the History of *Surrey*, the Editor observed, 'that he had not then learned where to apply for assistance on the subject of the Botany of the County;' the Professor therefore sends a list of the indigenous Plants of the County. He says that between 1752 and 1768 he was in

3. *Valeriana rubra.*	Merton Abbey walls; between Dulwich and Clapham.
4. *Crocus vernus.*	Battersea Mill.
5. *Schœnus albus.*	In a low bog between Croydon and Wickham; Bagshot Heath.
6. *Schœnus compressus.*	Shirley Common.
7. *Scirpus fluitans.*	Putney Heath, and Heath between Farnham and Godalming; in pits of water.
8. *Scirpus triqueter.*	Banks of the Thames.
9. *Eriophorum vaginatum.*	Croydon; the Heaths near Woking.
10. *Panicum verticillatum.*	Battersea Fields, and between Roehampton and Putney.
11. *Panicum viride.*	Battersea Fields; Guildford.
12. *Panicum Crus-galli.*	Battersea; Putney; Guildford; St. Martha's Chapel.
13. *Panicum sanguinale.*	Battersea; Wandsworth; and St. Martha's Chapel.
14. *Agrostis Spica-Venti.*	Kingston-on-Thames; Croydon.
15. *Poa bulbosa.*	Clapham.
16. *Festuca elatior.*	Battersea.
17. *Bromus diandrus.*	Battersea.
18. *Avena pubescens.*	Banstead Downs.
19. *Montia fontana.*	Streatham Common.
20. *Dipsacus pilosa.*	Guildford and Godalming.
21. *Sherardia arvensis.*	Battersea Fields.
22. *Centunculus minimus.*	Barnes Common; Croydon.
23. *Asperula cynanchica.*	Box-hill; Croydon; Sutton.
24. *Galium anglicum.*	Croydon; Duppa's Hill.
25. *Plantago uniflora* (*Littorella*).	Wimbledon Common.
26. *Anchusa sempervirens.*	Vauxhall.
27. *Cynogloss. sylvaticum.*	Said by Merrett to be found at Norbury, near Leatherhead. It is still plentiful there.

the habit of making annual visits to his Father, who then occupied the Hill House on *Streatham Common*, and that he made minutes of such plants as occurred to him in that neighbourhood; that he published lists of these, among others, as an Appendix to his Account of the Plants of *Cambridgeshire* in 1763; that in an interleaved copy he added such plants as he found afterwards; that from this he made out what he sends, with the addition of such plants as he had gleaned from some other local works on the plants of *England;* that the plants are in the order of *Linnæus's* System, and the names, both *Latin* and *English*, correspond with *Dr. Smith's Flora Britannica.* For a revision of this, with additions, I am indebted (amongst many other communications) to Arthur Tyton, Esq., whose attention to this Science is well known by his systematically arranged garden at Wimbledon."

28.	*Pulmonaria officinalis.*	In a wood between Croydon and Godstone.
29.	*Menyanthes nymphæoides.*	Near Kingston and Walton bridges.
30.	*Hottonia palustris.*	Battersea.
31.	*Anagallis arvensis.*	Between Stockwell and Camberwell; Peckham; Streatham; and between that and Mitcham; Croydon.
32.	*Campanula patula.*	Cobham.
33.	*Campanula Rapunculus.*	Croydon; Esher.
34.	*Phyteuma orbicularis.*	Near Leatherhead; Epsom Downs; Sutton; Dorking.
35.	*Verbascum Lychnitis.*	Croydon; Duppa's Hill.
36.	*Atropa Belladonna.*	Dorking; West Clandon.
37.	*Rhamnus catharticus.*	Dulwich; Streatham.
38.	*Rhamnus Frangula.*	Dulwich; Norwood.
39.	*Vinca minor.*	Croydon; Cobham; Wandsworth; Wimbledon.
40.	*Vinca major.*	Dulwich; between Wandsworth and Wimbledon.
41.	*Chenopodium hybridum.*	Norwood; Battersea-fields.
42.	*Bupleurum rotundifolium.*	Sutton; Epsom; Leatherhead.
43.	*Bupleurum tenuissimum.*	Godalming.
44.	*Caucalis daucoides.*	Banstead Downs.
45.	*Bunium flexuosum.*	Norwood; Streatham.
46.	*Phellandrium aquaticum.*	Wimbledon brick-pits.
47.	*Circuta virosa.*	Battersea.
48.	*Pimpinella magna.*	Guildford; Godalming.
49.	*Drosera longifolia.*	Bagshot Heath; Esher.
50.	*Drosera rotundifolia.*	Esher; Wimbledon Common.
51.	*Myosurus minimus.*	Wimbledon; Streatham.
52.	*Fritillaria Meleagris.*	Between Mortlake and Kew.
53.	*Tulipa sylvestris.*	Wimbledon Park.
54.	*Ornithogalum luteum.*	Godalming meadows.
55.	*Ornithogalum umbellatum.*	Streatham.
56.	*Scilla autumnalis.*	Moulsey Hurst; Kew Green.
57.	*Narthecium ossifragum.*	Putney Heath.
58.	*Convallaria majalis.*	Norwood.
59.	*Convallaria multiflora.*	Stockwell hedges.
60.	*Acorus Calamus.*	Hedley.
61.	*Alisma Damasonium.*	Wimbledon Common.
62.	*Epilobium roseum.*	Lambeth Marsh.
63.	*Chlora perfoliata.*	Croydon fields.
64.	*Vaccinium Myrtillus.*	Leith hill; heaths in Shere; Ewhurst, Cranley and Albury.
65.	*Polygonum minus.*	Putney Heath.

66.	*Polygonum Bistorta.*	Battersea meadow.
67.	*Butomus umbellatus.*	Croydon.
68.	*Saponaria officinalis.*	Streatham Common; and Lordship Lane, near the Green Man; probably escaped from gardens.
69.	*Dianthus Armeria.*	Croydon; between Dorking and Mickleham; between Dulwich and the Green Man; top of Oak on Honour Hill; Streatham.
70.	*Silena Anglica.*	Coombe; Weybridge.
71.	*Arenaria tenuifolia.*	Battersea.
72.	*Sedum Telephium.*	Dulwich; Norwood.
73.	*Sedum dasyphyllum.*	Kew.
74.	*Cerastium semidecandrum* β.	Croydon, dry banks.
75.	*Cerastium arvense.*	Croydon.
76.	*Spergula subulata.*	Mitcham Common.
77.	*Rosa spinosissima.*	Wimbledon Common.
78.	*Potentilla argentea.*	Wimbledon Field, near Octagon House.
79.	*Comarum palustre.*	Wimbledon.
80.	*Cistus surrejanus.*	Croydon.
81.	*Aquilegia vulgaris.*	Norwood.
82.	*Stratiotes aloides.*	Thames side.
83.	*Anemone apennina.*	Wimbledon Park; woods about Shere and Guildford.
84.	*Ranunculus parviflorus.*	Banstead Downs.
85.	*Ajuga Chamæpitys.*	Banstead Downs, in cornfields.
86.	*Mentha piperita.*	Croydon and Mitcham; by the riverside.
87.	*Mentha rubra.*	Peckham Fields.
88.	*Mentha Pulegium.*	Streatham Common.
89.	*Leonurus cardiaca.*	Coombe Wood Lane.
90.	*Origanum vulgare.*	Croydon.
91.	*Scutellaria minor.*	Streatham Common.
92.	*Antirrhinum Peloria.*	Clapham; sandy pastures.
93.	*Scrophularia vernalis.*	Mitcham Common; Field in lane to Merton.*
94.	*Digitalis purpurea.*	Norwood; Shere.
95.	*Limosella aquatica.*	Croydon.
96.	*Orobanche major.*	Epsom; Leatherhead; Norwood.
97.	*Isatis tinctoria.*	Guildford.
98.	*Alyssum (Camelina) sativum.*	Wimbledon.
99.	*Iberis (Teesdalia) nudicaulis.*	Barnes Common; Putney Heath.

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* Mr. Alexander Smith, Surgeon and Apothecary of Croydon, found it there in April, 1759. It had not been observed to be wild in England before. See 'Phytologist' for December.

100. *Cardamine amara.* River-side; between Kew and Mortlake.
101. *Erysimum cheiranthoides.* Weybridge.
102. *Turritis* (*Arabis*) *hirsuta.* Smitham Bottom, near Croydon.
103? *Turritis glabra.* Wimbledon, on walls.
104. *Erodium moschatum.* Streatham Common.
105. *Malva moschata.* Balham, five-mile-stone, Epsom road.
106. *Fumaria parviflora.* Epsom.
107. *Fumaria claviculata.* Wimbledon Camp.
108. *Ulex nanus.* Wimbledon Common; Shere; Albury.
109. *Lathyrus Nissolia.* Stockwell; Streatham; Mitcham.
110. *Lathyrus pratensis.* Merstham.
111. *Lathyrus sylvestris.* Wimbledon Park.
112. *Lathyrus palustris.* Peckham Fields.
113. *Hedysarum Onobrychys.* Banstead Downs.
114. *Trifolium scabrum.* Croydon.
115. *Trifolium glomeratum.* Kew Green.
116. *Hypericum Androsæmum.* Norwood; Wimbledon Wood.
117. *Hypericum humifusum.* Mitcham Common; Dulwich.
118. *Hypericum montanum.* Croydon; Shere.
119. *Hypericum Elodes.* Shirley Common.
120. *Prenanthes muralis.* Merton Abbey walls; road from Croydon to Sandershead.
121. *Lactuca virosa.* Streatham.
122. *Leontodon palustris.* Mitcham Common.
123. *Hieracium murorum.* Norwood.
124. *Hieracium sabaudum* (*boreale*). Norwood and Dulwich.
125. *Hyoseris minima.* Petersham.
126. *Crepis fœtida.* Banstead Downs.
127. *Carduus pratensis.* Croydon Common.
128. *Gnaphalium dioicum.* Banstead Downs.
129. *Erigeron acre* (*acris*). Streatham.
130. *Anthemis nobilis.* Dulwich; Streatham; Woking, etc.
131. *Achillea Ptarmica.* Streatham.
132. *Orchis bifolia* (*Habenaria chlorantha*). Norwood; Penge Common.
133. *Satyrium viride* (*Habenaria viridis*). Banstead Downs.
134. *Ophrys paludosus.* Reigate road.
135. *Ophrys spiralis* (*Spiranthes autumnalis*). Banstead Downs.
136. *Ophrys anthropophora.* Near Croydon; Langley Fields; between Croomhurst and Selsden; and in a lane leading from Smitham Bottom to Sandershead.
137. *Serapias* (*Cephalanthera*) *grandiflora.* Godstone.
138. *Carex axillaris.* Putney.

139. *Carex depauperata.* Dry Wood; Godalming.
140. *Buxus sempervirens.* Box-hill; near Dorking.
141. *Xanthium Strumarium.* Dulwich.
142. *Amaranthus Blitum.* Battersea fields.
143. *Hydrocharis Morsus-ranæ.* Battersea fields.
144. *Sagittaria sagittæfolia.* Battersea fields.
145. *Quercus sessiliflora.* Norwood.
146. *Ruscus aculeatus.* Norwood.
147. *Atriplex erecta.* Battersea-fields, near Nine Elms.
148. *Ophiogloss. vulgatum.* Battersea meadows.
149. *Osmunda regalis.* Weybridge.
150. *Osmunda Lunaria.* Shirley Common.
151. *Lycopodium inundatum.* Bagshot Heath.
152. *Lycopodium ampullaceum (clavatum).* Shirley Common.
153. *Lycopodium Selago.* Shirley Common.
154. *Scolopendr. vulgare.* Merton Abbey walls.
155. *Blechnum boreale.* Norwood.
156. *Asplenium Trichomanes.* East Sheen.
157. *Asplenium Ceterach.* East Sheen.
158. *Polypodium vulgare.* Norwood.
159. *Pilularia globulifera.* Streatham Common.

NOTES ON THE ABOVE LIST.

A. The following plants are probably still existing in the anciently described locations, viz.:—

Salvia verbenaca.
Valeriana rubra.
Scirpus fluitans.
Agrostis Spica-Venti.
Festuca elatior.
Avena pubescens.
Montia fontana.
Dipsacus pilosus.
Menyanthes nymphæoides.
Asperula cynanchica.
Cynoglossum sylvaticum.
Campanula patula.
? Campanula Rapunculus.
Phyteuma orbicularis.
Verbascum Lychnitis.
Atropa Belladonna.
Rhamnus catharticus.
Rhamnus Frangula.
Vinca minor.
Vinca major.
Chenopodium hybridum.
Bupleurum rotundifolium.
Caucalis daucoides.
Drosera rotundifolia and D. longifolia.
Scilla autumnalis.
Narthecium ossifragum.
Convallaria majalis.
Acorus Calamus.
Alisma Damasonium.
Chlora perfoliata.
Vaccinium Myrtillus.
Polygonum minus.
Butomus umbellatus.
Saponaria officinalis.
Dianthus Armeria.
Silene anglica.
Sedum Telephium.
Cerastium semidecandrum.
Rosa spinosissima.
Potentilla argentea.
Cistus surrejanus.
Aquilegia vulgaris.
Anemone apennina.
Ranunculus parviflorus.
Ajuga Chamæpitys.
Mentha piperita.
Scutellaria minor.
Antirrhinum Peloria.
Digitalis purpurea.
Orobanche major.
Isatis tinctoria.
Iberis nudicaulis (Teesdalia)
Cardamine amara.
Erysimum cheiranthoides.
Turritis hirsuta (Arabis).
Fumaria claviculata.
Ulex nanus.
Lathyrus Nissolia (except Stockwell).
L. pratensis.
Hedysarum Onobrychis.
Hypericum Androsæmum.

H. elodes.
Prenanthes muralis.
Hieracium murorum.
H. sabaudum.
Anthemis nobilis.
Ophrys spiralis.
Ophr. anthropophora.
Carex depauperata.
Buxus sempervirens.
Quercus sessiliflora.
Ruscus aculeatus.
Lycopodium inundatum.
Scolopendrium vulgare.
Blechnum boreale.
Asplenium Trichomanes.
Polypodium vulgare.

Note. Convallaria majalis grows in Marystood Wood, near Worplesdon, three miles from Guildford. It grows in a depression near the top of Croomhurst, a prolongation of the Addington Hills, also in Dulwich Wood at Norwood. *Silene anglica* was, in 1837, very plentiful in cornfields near the HUT, a little roadside inn between Ripley and Cobham. *Rosa spinosissima* is still plentiful on Barnes Common. *Arabis hirsuta* grows between Guildford and Albury. *Turritis glabra* grew about Shere in 1837. *Hypericum Androsæmum* grows in several places near Guildford and Shere.

B. The following list contains the doubtful plants, and such as have shifted their quarters since Professor Martyn's time:—

Schœnus albus. Is this now found between Croydon and Wickham?

S. compressus. Shirley Common?

Eriophorum vaginatum. Was found near Croydon less than thirty years ago. Is it there now?

Poa bulbosa. When was this last seen on Clapham Common?

Centunculus minimus. When collected on Barnes Common?

Galium anglicum. Is this still a Croydon plant?

Plantago uniflora (*Littorella lacustris*)? A Wimbledon plant?

Pulmonaria officinalis. Where is the wood between Croydon and Godstone where this fine species grows?

Bupleurum tenuissimum. Godalming?

Pimpinella magna. Guildford, Godalming? Can any reader verify these locations. *Note.* It grows between Godstone and Longfield on the roadside.

Myosurus minimus. Wimbledon? The station is very likely to produce this plant.

Tulipa sylvestris. Wimbledon Park? Where? Specimens from the park were collected not very long ago.

Polygonum Bistorta may still be in what was called Battersea fields; but its ancient station was destroyed when the park was formed.

Dianthus Armeria. Croydon; copiously? This is a very capricious plant. It often changes its locality. It has been seen near St. Martha's, and near Albury.

Sedum dasyphyllum. Is this known as a Kew plant?

Spergula subulata. Mitcham Common? On Witley Common.

Spiræa Filipendula. Clapham.

S. nodosa. Nine Elms?

Comarum palustre. Wimbledon? near Hampton Lodge.

Stratiotes aloides. Thames side; where?

Leonurus Cardiaca. On whose authority was this originally entered as a Combe Lane plant?

Scrophularia vernalis. Has this rare plant disappeared in its Mitcham station?

Turritis glabra. Wimbledon; on walls.

Erodium moschatum. Streatham Common; where?

Fumaria parviflora. Epsom? The species or form now so called was not admitted into lists of British plants for many years after the date of this 'Catalogue of Surrey Plants.'

Lathyrus Nissolia Exclude Stockwell. A bank on the verge of Gatton Park, near Red Hill, produces it in abundance; also it is in several parts of Surrey.

Lathyrus sylvestris. Wimbledon Park is not an unlikely locality; but who will vouch for it?

Trifolium scabrum. Croydon.

Lactuca virosa. Does this still grow at Streatham? If so, Surrey still has this plant. Is there a second station known?

Hyoseris minima. Does this plant still grow at Petersham?

Crepis fœtida. Banstead Downs?

Gnaphalium dioicum. Banstead Downs?

Erigeron acris. Streatham?

Ophrys paludosus (sic)? Epipactis palustris. Reigate.

Carex axillaris. Putney?

Xanthium Strumarium. This may grow at Dulwich or anywhere else in England, rare though it be. Within the last few years several specimens have been seen about Battersea, Wandsworth, and Kew, and a much rarer *Xanthium* was seen on the Middlesex side of the river.

Osmunda regalis. Weybridge? a very likely habitat.

Lycopodium ampullaceum and *L. Selago.* Shirley Common?

Pilularia globulifera. Streatham Common? It grew plentifully in a pond on the roadside between the Tangier and Hedley.

Plants no longer to be found where they grew in Martyn's time:—

Crocus vernus.

Scirpus triqueter, grew on the river-shore between Battersea and Nine Elms, about seven years ago. It is no longer to be found there.

Panicum verticillatum. Has not recently been found in Battersea fields.

Panicum sanguinale. Has not been seen for many years in the county of Surrey.

Bromus diandrus. Has recently been seen near the steam-boat pier, but not at Battersea. *Note*. It is a very uncertain plant.

Anchusa sempervirens could scarcely grow now about Vauxhall. Like Peckham, Clapham, and Stockwell, the ground is covered with rows of houses.

Hottonia palustris. This rare plant has been suffocated in the foul air of the sewage from the houses of East Hill and Wandsworth-road.

Cicuta virosa. Has not been seen in Battersea for many years. It might once have grown here.

Smyrnium Olusatrum. Vauxhall.

Œnanthe silaifolia. Battersea.

Fritillaria Meleagris. Was seen in the Mortlake locality not very long ago. It has not appeared for some years.

Convallaria multiflora. Cannot now grow at Stockwell.

Arenaria tenuifolia. Not in Battersea fields. Is there a well-authenticated Surrey station for this species?

Papaver dubium, *Anagallis flore cœruleo, etc.* Must long have disappeared about Stockwell.

Mentha rubra. *Mentha viridis*. There are no fields now at Peckham.

Geranium pratense. Battersea.

Lathyrus Nissolia. Cannot grow at Stockwell for the above reason. (See List B.)

Lathyrus palustris. Has not been seen near London for more than a century.

Trifolium hybridum. Peckham.

Salix purpurea. Vauxhall.

Sagittaria sagittæfolia. Not in Battersea fields.

Hydrocharis Morsus-ranæ. Not in Battersea where ditches are scarce. It grows at Barnes Common.

Atriplex erecta. This *bête noire* of botanists is one of our botanical mysteries.

Ophioglossum vulgatum. Battersea cannot now be credited nor debited with this plant.

Note. *Carduus arvensis* var. *setosus* invenitur varietas foliis lævioribus vix spinosis non sinuatis nec tam profunde divisis. Amongst the corn in Battersea fields, over against Chelsea, "cui examussim (exactly) respondet figura *Cardui arvensis* Tabernæmontani Ic. p. 700 quem Carduum in avena provenientem vocat C. Bauhinus, quemque priori plerique Botanici eundem faciunt; sed si non, quod probabile videtur, species diversa sit, insignem saltem varietatem esse, nemo qui plantam viderit, negaverit." "This thistle which agrees *quite* with the figure in Tabernæmontanus,

p. 700, and which Bauhin calls a thistle which grows in cornfields and is believed by many botanists to be the same as *C. arvensis*, but if it is not a different species, which is probable, it is at least a very remarkable variety."—*Ray*, *3rd ed.*, 194, *No.* 6.

The above variety was seen in a spot which once was part of Battersea fields, but where now there is a large crop of small brick houses, but neither corn nor cabbage. That the variety collected there, and now *horto in meo*, is a genuine descendant of the thistle or thistles observed by Dillenius, and described in his edition of Ray, I will not assert; it grew near, if not in the same anciently known locality so late as 1857.

N.B. Any information about the species contained in the above lists, and any corrections, will be gratefully received by the Publisher, 45, Frith Street, Soho, London, or by the Editor, at 28, Upper Manor Street, Chelsea.

KENTISH BOTANY.

Before noon on the 15th of August (see 'Phytologist,' p. 140) we started by train from Appledore, and went again to Ashford, paying a short visit to Willesborough Leas, Brabourne Leas, etc. What was achieved in these renowned localities, will be partly seen in the following epitome of our proceedings; and the residue will be forthcoming at a more convenient season.

In presenting the benevolent readers with an abstract of our discoveries, and in laying before them our reflections on the past and present condition of this district, once memorable in history, our intention is not to vilify our own labours, nor to grumble about the apparent insignificance of the results.

The rarer plants seen and localized, it may be granted, are not many; but we will not admit, that the old saying of "much cry and little wool" is justly applicable to our case. We saw all the plants in Mr. E. Cowell's Kentish Flora with one or two exceptions; though we did not see all the plants anciently seen about Romney by Ray and other botanists in the seventeenth century.

In our four days' botanizing we got a very fair idea of the vegetation of Romney Marsh; and in addition to the species already noted, found *Scirpus maritimus* and *Arundo Phragmites* almost everywhere, and the former more abundant than the latter. *Apium* *graveolens* and *Œnanthe Lachenalii* were also all but ubiquitous on the margins of ditches. *Butomus*, on the other hand, though it occurred in many places, was not so abundant as in the marshes of Reculver, St. Nicholas, Sarre, etc., in or near Thanet.

Two points, before mooted in the 'Phytologist,' but undetermined, are now settled; we hope, to the satisfaction of the readers of this article; *Nymphæa alba* var. *minor* is *one*, and *Pimpinella magna* var. *dissecta* is the *other*. The former has already been entered at p. 139, to which the reader is referred, and it will further corroborate the opinion there stated to intimate here that a friend and correspondent of ours has seen this so-called variety, both in the New Forest, near Brockenhurst, and also in Ham-ponds, near Sandwich, and observed that the varieties were of various magnitudes, and that the gradations were inappreciable. The plants increased in size not by a manifest but by an imperceptible enlargement of dimensions.

The second plant, *Pimpinella magna* var. *dissecta*, was observed not far from Willesborough Leas, which, it may be observed in passing, are no longer *Leas*, but covered with houses, plantations, well-drained meadows, and corn-fields. This species was very plentiful, and it varied much in the tenuity of the leaflets and segments of its decompound leaves; these were so multiform, that it was a puzzle to decide whether some intermediate examples belonged to the normal or to the dissected-leaved forms.

In Morison and Robarts's History, it is recorded that this variety, viz. *Pimpinella Saxifraga major foliis dissectis*, was found everywhere in hedges or on banks by hedges near Maidstone, in Kent. Observed by Mr. J. Sherard, in company with Mr. Rand. See Hist. Oxon. iii. 284. Can any learned reader tell the Editor of this Journal where the travels of these two botanists are recorded?

In reference to *Crepis biennis* the same remark should be made. On the other side of the valley of the Stour, towards Brabourne, this plant grows in myriads, and the root- and stem-leaves present all the possible varieties, from the entire to the doubly pinnatifid form. These may be distinguished from *Crepis taraxacifolia*, certainly by the fruit, pretty accurately by the radical leaves, and possibly also by the locality. We never observed these two species growing together. Have any of our readers ever seen them in juxtaposition (in close proximity)?

The grand discovery of this very agreeable excursion was *Verbascum thapsiforme*, a fact already announced in these pages. See Vol. V. p. 362, N.S.

A few reflections on the past and present condition of Romney Marsh will conclude this rather long article.

Mr. John Russell Smith, in his 'Bibliotheca Cantiana,' in which he enumerates and briefly describes all works on the topography and antiquities of Kent, from the earliest records to the year 1837, informs his readers that the best work on this part of the county is Sir William Dugdale's 'History of Embanking and Drayning,' a work which embraces all the drainage operations in England up to his time, the middle of the seventeenth century. It may be inferred that the history of the Kentish Fens is not very extensive, and that of Romney Marsh still less.

In the 'Saxon Chronicle,' the earliest historical document of England, perhaps of modern Europe, and in the subsequent chronicles posterior to the Anglo-Saxon, Danish, and Norman periods, there are several statements which show that in these remote times this district was of far greater importance than it is in modern times.

In those early days this locality, all but unknown except by graziers and sportsmen, was regarded by our kings as the bulwark of the realm. The Cinque Ports then furnished the entire English navy; and as a recompence for their services in war were entitled to certain immunities and privileges which are now obsolete and forgotten. The name alone survives.

The five ports (Cinque Ports) were Hastings, Romney, Hythe, Dover, and Sandwich, and with each of these several other contiguous ports were associated; with Romney, for example, Promhill, Lede (Lydd), East Weston, Dengemareys (Dungeness), Old Rumney. West Hythe was united with Hythe. With the exception of Dover and Sandwich, the most important members of the Cinque Ports were either in Romney Marsh or at its two extremities on the East and on the West.

In King Edward I.'s reign Rumney contributed four ships of war, Lydde seven, Hythe five. There is no ship now in Rumney Marsh, and it does not possess a single harbour. In fair weather a ship might unload or load at Dymchurch, a place unknown in the olden times.

Hythe and Lymne Castle are both memorials of a period and of a people anterior to the arrival of the Angles and Saxons in Britain. The way by land to the ancient Reculver was from Hythe by the Roman road to Canterbury through Elham, and hence to Regulbium (Reculver).

Appledore was a place of some importance in the ninth century, when it was attacked and plundered by the Danes. Some modern historians are puzzled to account for an attack on such an insignificant place by those ruthless invaders, being so far from the sea, where their great power then resided. The moderns have forgotten, if they ever had known the fact, that for hundreds of years after this event Appledore, now a rural and obscure inland village, above half-a-dozen miles from the sea, was a maritime and a principal town of the Anglo-Saxons.

The following extract shows that it was on the sea so late as the year 1377, the first of Richard II.:—

"Richard de Horne, etc., were put in commission for to supervise the banks in this marsh from the town of Hethe (Hythe) all along the sea-coast unto Apuldre; as also all other marshes within this county, viz. from the haven of Romney to Promhill Church, and thence by the sea-coast to Apuldre before mentioned."

These commissioners were appointed in the first year of Richard II.'s reign. See Sir William Dugdale's 'History of Embanking and Drayning of divers Fens and Marshes,' p. 33. 2nd edition. London, 1772, folio.

Again. It also appears from ancient documents that there was water communication between this village (Appledore) and Romney; we presume Old Romney, for Dugdale writes:—

"In 11th Ed. III., A.D. 1323, there was an arm of the sea leading from an arm of the sea called Apuldore, towards the town of Romeney, . . . which was then newly obstructed by the sea-sands, that ships could not pass thereby to the said town of Romeney as they had used," etc.—*Dugdale*, p. 43.

That the sea once flowed up the depression at and beyond Dymchurch is an indisputable fact, for it would soon recover part of its ancient bed, or channel, or creek, if it were not kept within certain bounds by the sea-wall, which is about three miles long, above twenty feet in height, and as many feet wide at the top, on which is the road; its base is said to be three hundred feet wide, and in 1780 it was maintained at a cost of £4000, annually raised by scot and lot. The outer side is defended by a raddle-work of faggots, fastened to rows of strong piles.

Were the sea to break through this barrier, the ancient channel by Lymne might be restored, and the name Shipway be something more than a memorial of the past.

This sea-wall, which Sir William Dugdale, no ordinary authority, believes was built by the Romans, is between Hythe and New Romney, and is the only barrier on this, the east side of the Marsh. The coast from the end of the wall by New Romney, Lydd, and Dungeness, is of sufficient elevation to defend the interior from marine encroachments. The beach forms not a ridge, but a sort of table-land, all around from near Dymchurch by Dungeness to near the mouth of the Rother, or for several miles beyond the Dungeness towards Rye.

The entire surface of this alluvial track is intersected by ditches or drives and roads; hedges and trees are as rare in the marsh as they are in the Isle of Thanet.

There is no elevation except that at Lydd, which, as above said, is situated on a mound of sand rising above the general level of the Marsh, perhaps twenty or thirty feet. Old Romney, said to be on a hill, is probably not more than two or three yards higher than the level of the sea at spring-tides.

The dip of the land is not towards the sea, but to the interior, and the water of the Marsh is provided with a deep channel through the beach, where it flows into the sea at low water or ebb-tides, and the sea is prevented from flowing into the Marsh by flood-gates.

When Dugdale's map of this Marsh was made, New Romney was close upon the sea-shore, though its harbour had been destroyed by a terrific storm, which filled it up in the time of Edward III. At that period Lydd was about as remote from the sea as it is still. The sea has now retired about two miles from New Romney and ten from Appledore in this direction.

About Brookland, near the Woolpack Inn, there is a remarkable depression mostly flooded, except in dry seasons; and on the margins of this depression, as before observed, there are proofs of its former marine condition still existing in the marine plants which it continues to produce. Its vegetation is entirely of this character.

The soil of Romney Marsh is, like its surface, not much diversified. Its fertility is almost proverbial. Cultivation is not the rule here, but the exception; but where the land was under tillage the crops were luxuriant. Grazing is the occupation of the inhabitants; and sheep, colts or fillies, breeding mares, and a few bullocks, constituted the stock of the graziers. The sheep are numerous and of the Southdown breed.

From this brief notice of the physical condition of Romney Marsh, it appears that the sea, which has washed away miles from the north-eastern shore of the county, as for example, in the Isle of Thanet,—for the Reculver is believed to have been three miles from the sea in very remote times, and half a mile distant in almost living memory—has added much to the dimensions of this part of Kent. Its area is probably doubled since the Romans built the first wall, near Dymchurch, to dyke out the ocean.

The physical contrast between this obscure nook and the Isle of Thanet is remarkable; this forces itself on the notice of even superficial observers.

In Thanet the land, or the surface, or the soil, has diminished almost one-half since the beginning of the historic period, or since the seventh century. During the same period its population, wealth, and material progress, have been constantly on the increase. Here it may truly be said, as the poet said of England during the golden age:—

> "There was a time, ere England's griefs began,
> When every rood of land maintained a man."

This cannot be said of Romney Marsh. The number of foals, breeding-mares, bullocks and cows, sheep and lambs, which it rears and fattens, is immense, and is to be reckoned by thousands and tens of thousands. But here there is barely one man for every twenty acres, where, at the poet's reckoning, there should be eighty. And of these, how many are supported by the land? Barely the half of them. The land requires no labour, for it is all pasturage; it is naturally so fertile, that it produces abundantly in all seasons, good or bad, without any manure, except what is dropped by the sheep, and beeves, and horses, by which it is grazed. Its fences need no repair, for the dykes or ditches are all but indestructible. The sole trade of Romney Marsh is that of live stock; and this trade is in few hands, and can be successfully carried on with a large capital and a small amount of labour.

Of resident gentry there are none here but the clergy, for who would reside here but those who must? Churches are few, and consequently far between, in Romney Marsh: but few though they be, they are far in excess of the wants of the population, which is not increasing.

At Old Romney there is a church about a furlong or two from the road, where the few houses in the parish stand; only a very few—a couple of farms without any cottages. Cottages are about as scarce here as white crows. There is no way, not even a bridle-road, to the church from the highway, but through a field, and this is so seldom trodden that the path is not discernible. Those who worship here on the Lord's Day are so few, that their feet make no permanent impression on the grass over which they walk one day in seven. Even the track in the churchyard between the stile and the church-porch is invisible: the worshippers are so few, or they tread so lightly, that the grass in the other parts of the sacred enclosure is no greener than by the very portal of the sanctuary. By appearances, it might be said that nobody goes to church. But this would be a very uncharitable and untrue assertion; for the few parishoners, say a dozen, or at the utmost a score, might pass from the road across the field and through the churchyard once or even twice every Lord's day, and all traces of their steps might be obliterated on the luxuriant herbage before the next Sunday.

We visited all the four towns or places where the majority of the population resides, viz., Appledore, Dymchurch, New Romney, and Lydd; and they all, especially the two last-mentioned, have a more desolate aspect than Sandwich, once the excellency and now the opprobrium of the Cinque Ports. This latter town, with its little harbour, its inns and railway-station, and its situation on the leading thoroughfare between the populous towns and villages of the Isle of Thanet, and Deal, and Dover, has now and always must have had some traffic; and although some of its streets afford a good bite for cattle and sheep, one of them at least is a principal road or thoroughfare between populous and fashionable places. New Romney and Lydd do not participate in any one of these advantages. They have no harbour within from four to seven miles; they are not on the nearest road even from Hythe to Rye. Strangers are rarities in their streets. Some of the people of New Romney never were so far as Lydd in that direction, and indeed it is not easy to imagine what anybody should go to Lydd for, or to New Romney either. Lydd is the *ultima Thule,* the John O'Groat's of England; and when the traveller must needs come back again, he very naturally asks the sensible question why he should go there at all, for he cannot go much further in this direction.

But the writer must in compassion to his readers desist, or he may give them cause to wish that he had never gone there or that he had never come back, which would have had much the same effect on this long article; for in the latter case it would have existed only in intention. He has not the most remote hope that what he has written will induce anybody, however fond he may be of locomotion, to pay a visit to this singular place. Yet it is perfectly unique; it has no parallel in England. We have traversed the Eastern Lowlands—that is, the Fens of Huntingdon, Cambridge, Northampton, Norfolk, and Lincoln—over and over, by coach and by the marrow-bone stage; but they are not like Romney Marsh. They are "flat and dull" like it, but not unprofitable even to the passenger or sight-seer, for they lead to Peterborough, Ely, and Lincoln, all famed for their cathedrals, and to other places of less note. Romney Marsh leads to nothing but to the lighthouse at Dungeness. But there is a beauty in Romney Marsh or in its environs: there is the sea on one side, and there is on the other something like a girdle of chalk; an elevation called the Downs—not the Mariners' Downs—crowned with woods and groves, and feathered with trees to the depression of the weald and marsh. All these beauties are absent from the Eastern Lowlands. The sea itself is one of the most interesting sights to a genuine Briton; he loves it with an intensity of admiration, equalled only by the love of a true Celt for his native mountains and his beautiful glens.

The Downs, which bound the Marsh on the east and on the west and on the north, are beautiful at a distance, but in close proximity they afford charming bits of scenery. Here also is the vale of Ashford, a part of the site of the ancient British forest of Andredsweld, which extended more than a hundred miles to the north and to the west, and which is celebrated in the masculine strains of Drayton, England's great chorographical poet.

There is no room for sketches of the scanty population; this may be forthcoming when we set out again on our travels to visit the less remote country between Canterbury and Folkestone, and the still better known parts of Kent which lie in the vicinity of Rye and Winchelsea. When we have done this bit of coast, which physically belongs to Kent though politically to Sussex, we shall have perambulated the shores of this county from Greenwich round to Beachy Head, a coast-line of not less than a hundred and fifty miles.

JACOB RAYER.

For the brief notice of this worthy member of the botanical brotherhood the writer is indebted to the 'Gentleman's Magazine' for 1797.

The above estimable local botanist was born in March, 1735, and at an early age had to provide for his own daily wants; for his parents were not affluent, and their son was not born "with a silver spoon in his mouth." He was, at the outset of his active life, employed in the East India Company's Warehouse, but in what capacity his biographer does not state.

He had another employment, possibly as an amateur, in the Galenical laboratory of the Apothecaries' Hall; and here, it is probable that he first contracted a love for plants, and was initiated into the mysteries of botanical science.

It is related that he was the box-bearer of the youthful Esculapians on their herborizing excursions; and as *such* he has the honour of being represented in the vignette prefixed to Curtis's 'Flora Londinensis.' It is related that he was patronized by the demonstrators of the company, and especially by Mr. Stanesby Alchorne, who held this office only two years, and by Mr. Wm. Hudson, who lectured to the students four years; and the latter is said to have presented him with a copy of his 'Flora Anglica.' This donation is somewhat like the gift of ruffles to a shirtless man; unless Mr. Rayer took the trouble of learning the language for the sake of the contents of the book. The writer of this notice, only a few weeks ago, was told by a lady who had spent some time botanizing on the Pyrenees, that a shepherd learned Latin with the aid of the Curé, to enable him to investigate the botany of this productive chain.

Mr. Rayer's favourite botanical works were 'Gerard,' by Johnson, and John Parkinson's 'Theatre of Plants.' I once heard of a man in a humble station who became a distinguished proficient in the application and etymology of the English language by studying 'Bailey's Dictionary,' his only work on the subject. Parkinson and Gerarde are both useful, but they are better adapted for aiding the researches of historical botanists than for helping students to identify their collections or discoveries with previously known species. Our hero was fortunately able to apply to living authorities, and with authentic specimens at his command he probably had little difficulty while threading his way through the intricacies of modern nomenclature.

During the last twenty years of Mr. Rayer's life he was employed as *day man* in the office of the Secretary of the Hon. South Sea Company; but still retaining his appointment—honorary or stipendiary?—in the Medical Society.

His holidays were all spent in botanical excursions; and his favourite resorts were Greenhithe, Northfleet, Gravesend, Cobham, Cuxton, Rochester, and the Isle of Sheppey in Kent, and Hampstead Heath and Finchley Common in Middlesex.

The only known letter in Mr. Rayer's holograph is one to the demonstrator of the Chelsea Gardens, dated from Bolt Court, 1st July, 1795, excusing himself from joining a party formed to investigate the Rydate bogs, etc. Can any reader tell the publisher where these bogs are situated?

This amiable man, who is said to have been an indulgent husband, a steady friend, and a lively companion, an innocent, honest man, died in the beginning of or early in the year 1797.

His name appears in the earlier volumes of 'English Botany,' where Mr. Sowerby acknowledges his obligations to Mr. Rayer for specimens therein figured; also Sir J. E. Smith, the learned author of the 'English Flora,' commemorates his (Mr. Rayer's) claim to the discovery of *Althæa hirsuta*, one of the rare Cuxton plants. He bequeathed his botanical books, herbarium, papers, and botanical memoranda to the Medical Society of London.

SENEX.

MALVERN BOTANY.

BOTANY OF THE GEOLOGICAL PERIODS.

It has been suggested that with regard to the Scottish and Welsh mountains, that they retain traces of an early or "Glacial"

Flora, as it has been called, when the climate of Britain was generally of a much more severe character than at present. Several Saxifrages and a few other alpine plants, now left as relics on the summits of the Scottish Alps, and numerous on the sea-shores of the Polar regions in the present day, are supposed to testify to a time when a rigid climate was the character of countries now in the temperate region; while it is also inferred that those lofty heights were then lifted above the Northern primæval seas, if not so elevated above the ocean level as they now are. But no remnant of a Polar vegetation exists on the Malvern Hills, and no plant remains indicative of an earlier state of things than the present aspect of this part of the globe. Hence the inference must be, that these eminences never for any length of time ascended into loftier regions of the atmosphere than they now do. Certainly, no existing vegetation at present here suggests the idea.

GRASSES AND MOSSES OF THE MALVERN HILLS.

Contending for dominion with the fine-leaved Grasses—especially those of the genera *Anthoxanthum, Agrostis, Aira, Festuca,* and *Avena*—which probably ever since the rude Celts established themselves in Britain, have been nibbled by sheep upon these breezy heights, Cryptogamic vegetation abounds; and has in the course of ages filled up all the gaps and inequalities of the hills. The growth of Mosses, especially, combined with imbral action year after year, has at length caused such an accumulation of soil that the rocks are in many places hidden by this soft verdant inundation, and cultivation gradually creeps up the declivities, and might be extended abmost to the extreme height of the chain, which is but 1444 feet, though it is to be hoped that this will never take place. It can hardly be doubted, then, that combined with the disintegration of the brittle and baked rocks, Mosses have been the chief originators of the soil upon these hills. In proof of this it may be well to extract the following passage from 'The Botany of the Malvern Hills,' a work of detailed research to which I have alluded previously:—

"The Lichens have been generally considered the first pioneers of vegetation, but their efforts to create a *humus* for the nourishment of other plants are but trifling when compared with the economical powers of the Mosses. To test this by experiment, I took a tuft of *Bryum capillare,* Linn., from the roof of an outhouse at Malvern Wells, which was abundantly studded with it, together with the black earth collected about its base. The mass altogether weighed six ounces, but when, after repeated and careful washings, I had extracted all, or nearly all, the black mould that enveloped the roots, the actual residuum of frond essence that remained when again weighed amounted only to *half an ounce*; thus satisfactorily showing that the Moss, through atmospherical and imbral agency, had formed a soil exceeding its own weight at the very least above ten times! I had reason to believe too that this had been accomplished within three or four years. By operations on a more extended scale, it is easily conceivable how a bare mass of rock may, in the course of years, be covered with a thick coating of soil sufficient for the nourishment of grasses or any of the phanerogamous families, adapted to the climate and elevation where they may take up a position. The excessive growth alone of such Mosses as *Sphagnum palustre, Bryum hornum, Dicranum glaucum, Bryum palustre,* and *Hypnum molluscum, scorpioides, cuspidatum,* etc., in the course of time entirely fills up bogs, drinks up their water, and conduces to their ultimate establishment as component parts of *terra firma,* fit for useful cultivation. In this manner, then, have the original bare crags of the Malvern Hills received that rich compost now covering their sides; and which, combined with the disintegrating touch of Time's mouldering fingers, renders their soil in the present day capable of immediate cultivation even in the steepest places."

Lichens of the Malvern Hills.

But we must not forget the Lichens, for they probably preceded the Mosses in the first efforts of vegetation upon the reef of rocks here, when at length wrested from the dominion of the primæval seas. As some of the Lichens are almost imperishable—those in particular that are glued to the surfaces of granitic rocks—doubtless the age of some of them must be very great, carried back, perhaps, to the origin of the present state of things upon the globe. The *Parmelia stygia,* that blackens one of the upper rocks of the North Hill, may be older than the Pyramids of Egypt, for it is inseparable from the hard surface of the scar on which it reposes. A recent writer on cryptogamic plants extends the date of living Lichens to a far remoter period. He says—"The geographical Lichen, which often spreads over the whole rocky summit of a mountain in one continuous patch, many separate individuals being absorbed in one, must date from fabulous periods. I have gathered it in this form on the mountain of Schiehallion, on smooth quartz rocks, which exhibit here and there the glossy polish and deep striæ or flutings peculiar to glaciated surfaces, as distinct and unchanged by atmospheric disintegration, as though the glacier which had left these unmistakable traces behind it had only yesterday passed over them. And if these ice-marks can be accepted as an indication of the age of the Lichen—the first and sole organic covering of the rock, be it remembered—then in all probability it was in existence during the last great changes of the globe, which preceded the creation of the human race." I am not, however, disposed to extend the growth of the Lichen into "fabulous periods," as we do not know when it actually began to grow, nor can in general the individual Lichen be considered as a continuous living organism, like an Oak-tree or a Yew. Such species, indeed, as *Lecidea geographica, Urceolaria cinerea, Lecidea atrata, Lecanora glaucoma,* and *Isidium corallinum,* when once bound to a rock, live on it for ever, unless forcibly abraded; but the great majority of Lichens wither and crumble into powder with time like other vegetation, but in so doing they fulfil their appointed lot as servitors of Nature, and assist by their own decomposition to form a layer of soil, which, mixed with the broken *débris* of rocks, forms a *humus* at their bases, and is even swept onward by winds to help to fertilize the valleys below.

Including those that grow upon trees, the number of Malvern Lichens has been put down at 254; and when to this is added 145 Mosses, 28 Jungermanniæ, besides a numerous minute tribe of *Algæ*, and the *Fungi*, it is not to be wondered at that the Cryptogams considerably exceed the flowering plants in number within the Malvern district. As however the Lichens are a very slow-growing race, while the Mosses have a rapid and luxuriant extension, unless burnt up by fervid heat, and portions of them die and wither away every year, uniting with the black soil they may be said to have manufactured, it must be evident that they do more in the creation of mould than the Lichens, and this has been their work on the Malvern Hills.

I must refer to the Malvern Botany for a catalogue of the Mosses there given, to which one has been since added—the ***Bryum alpinum***—which is located in reddish patches at the northern base of the Herefordshire Beacon. ***Encalypta streptocarpa*** and ***Didymodon flexicaulis*** are confined to the Silurian limestone at the western bases of the hills; while the rare ***Zygodon Mougeotii*** only forms its round cushiony tufts upon a wet rock of the Worcestershire Beacon.

The Lichen and the Moss, then, must be acknowledged as the pioneers of vegetation on every bare rocky surface, and the depth of mould with which they have covered the once hard and bare ribs of our Malvern Hills suggests a long period for their accumulated action—but on this I forbear to speculate, being averse to "time bargains" as much in geology as on the Stock Exchange. Yet whatever Lichens and Mosses commenced to do has been carried on by the Grasses, that vegetated here as soon as circumstances gave the slightest covering on which their seeds could rest—

"Green leaves every one
Spread in their countless thousands to the sun,
Still growing, and no solitary blade
Of all their verdure ever disobeyed
The law of Nature: ev'ry stalk that lifts
Its head above the mould enjoys the gifts
Of liberal Heaven—the rain, the dew, the light."

And what is the "law of Nature" that they have to fulfil? Let any one pull up a tuft of grass, and mark the innumerable fibres of its roots, graduating into the finest hairs, spreading into every cranny pushing out on every side, and all loaded with the minute particles of the soil that they have broken up and elaborated through the rain that has filtered down over their leaves into the moistened earth below. The rain itself is loaded with fragmentary particles of fertility, which are received and treasured by the leaves of the humble plants on which they fall, and so ultimately placed in the recesses of the earth. So month after month soil accumulates, a nutriment for other plants ever seeking where they can find unappropriated sustenance. As an instance of the penetrating power of roots in urging their course downwards to break up the soil, however hard, on which they may be located, I may refer to a round tuft of grass from these hills, represented in Knapp's delightful 'Journal of a Naturalist,' where the fusiform, yet fibrous root has become four times the length of the blades at the surface. The author says that the figure given "represents the tufted head and entire roots of a grass gathered from a down (at Malvern) fed by sheep from time immemorial. It is probably that of the hard Fescue (*Festuca duriuscula*), which, having been constantly eaten down, has never thrown up flourishing stems, giving out only radical leaves. These appear to have been cropped short as soon as they have sprung up, the less succulent and strawy portions only being left, as a bush constantly clipped by the gardener's shears. The root appears to have *annually increased*, though the upper parts it was destined to nourish have been destroyed, until it became a lock of closely compacted fibres, like a tuft of hair six or eight inches in length." Grasses continually cropped by sheep, as long the case on the unenclosed Malvern Hills, increase much by their roots, and gather soil about them, thus continually increasing the crust of mould on the rocks beneath, now hidden by verdure.

EXTRACTS FROM CORRESPONDENCE.

Euphorbia Lathyris.

Many truly native British plants are very uncertain in their periodic appearance; they may be abundant in one season and may disappear in that locality for several years.

This is certainly the case with the above plant, *Euphorbia Lathyris,* which sometimes grows in the greatest abundance in the little Yew wood at the foot of Boxley Hill, near Maidstone, and then it may disappear for many years.—E. M. A.

I remember very many years ago seeing a single plant or so of this species, usually called "Caper Spurge," in the Bedford *Purlieus*, a part of Rockingham Forest between Wansford and Kingscliffe, but much nearer to the former than to the latter. I had often seen it in a semi-spontaneous condition, and concluded that the plant or plants seen in the *Bedford Purlieus* had sprung up from a seed accidentally dropped by the woodcutters, who might have seasoned their bacon with its acrid fruit. The above extract from Mr. E. M. A.'s letter throws considerable suspicion on this inference.

Concerning the Maidstone station, our kind correspondent who contributes the above notice of *E. Lathyris*, further informs us that Boxley Hill is a very productive locality.

"You will find the Bluebell and Boxley Hills well worth botanizing on; all the common Kentish Orchids are to be found there; the Bee, the Fly, the Fusca, the Man, the Butterfly and the Conopsea, *Epipactis grandiflora*; while near Stockbury the early Spider grows on one bank in abundance, and not far from the latter place is the *Helleborus viridis*, I believe, a much rarer plant than the *H. fœtidus*, which is common all about the chalk, and about as truly British as the Daisy."—E. M. A.

Verbascum thapsiforme.

I have not yet seen *Verbascum phlomoides*. I have found a variety of *thapsiforme* with all the flowers in twos or threes, or singly in the axils of the leaves, and not with a decided spike as it ought to have. My impression is that it takes this form when it grows as an annual plant in a shady place.—E. M. A.

Centaurea nigra.

A plant like the English radiated *Centaurea nigra* is common here (near Rouen) in the meadows. A form very like this grows in the Vale of Gloucester, and seeds taken from these latter produced the ordinary form of *Centaurea nigra*.—E. M. A.

Harebell, or Hairbell.

(See 'Phytologist' for 1861, vol. v. p. 191.)—There are divers opinions about the name of this popular flower, and the dispute is only about the name.

"Like doctors thus, when much dispute has pass'd,
They find their tenets just the same at last."

I never heard the Wood Hyacinth called "Harebell." When a child, my nurse taught me to call it "Bluebell." Among the rustics it bears no particular name. The rustics and old Master Gerarde are the best authorities for English names."—E. M. A.

Petasites vulgaris.

I do not know where to find the above plant within an easy walk of London. It grows near Maidstone, by the brook which runs from Boxley. It is rare about Maidstone, and the above is the only place where I have seen it.—E. M. A.

Palm.

(See 'Phytologist,' vol. v. p. 224.) —About Birmingham the early flowers of the Willow were always called Palm, and if in flower, were gathered on Palm Sunday, a relic of Popish times. In France the Box is the Palm; it is sold at the church-doors on Palm Sunday, after having been blessed by the priest, and is then hung up in the house for the twelvemonth.—E. M. A.

Cyclamen hederæfolium.

(See p. 343, *et supra.*)—*Cyclamen hederæfolium.*—"Woods not very far from Hythe or Cranbrook." I never heard of the *Cyclamen* growing near Hythe. Cranbrook is a considerable distance off, on the other side of the Weald. It still grows in plenty in the celebrated old station of Sandhurst, near Cranbrook. A relative of mine a few years ago brought many roots from that station, a wood, and I have seen the plant in flower in a garden at the Bower, near Maidstone; and I could see no difference between the wild plant and the common garden one. My aunt often sowed the seeds in a wood at Barming, near Maidstone; and I have known a fine plant brought from that place, doubtless one of the seedlings from seeds which she had deposited.—E. M. A.

Odoriferous Plants.

I have long purposed to send you a paper for the 'Phytologist,' "upon the odours of certain plants as an unfailing means for the determination and limitation of species." This of course could only refer to the odorous plants, either good or bad smelling; the scentless could have no place in my paper. As this is a subject which has occupied my mind and observation many years, and one which I have never seen mooted or brought before the public or hitherto noticed by any of our botanical brethren, my object is to direct the attention of the botanical world to the fact that the odour of plants is a sure means for the identification of the species, being unchanged and unchangeable in all plants possessed of that property, whether cultivated or wild, native or exotic.

As examples, I will adduce *Viola odorata* and *Viola hirta*; the former is *always* scented, the latter *never*. I have cultivated both for some years, and culture has not changed these natural characters. Another example is the Wallflower, which is scented with its peculiar and grateful odour, whether produced in the garden of the peer or of the peasant—whether growing on old walls and roofs, or on the bare exposed rocks of Kinnoull."

J. S.

[We are obliged to our excellent correspondent for his good intentions. The paper will be very acceptable, and will doubtless be appreciated by the readers of the 'Phytologist.']

BOTANICAL NOTES, NOTICES, AND QUERIES.

HYOSCYAMUS NIGER.

Sir,—In the month of July I formed a picnic party of youths of both sexes, and spent the day on the magnesian limestone. As we were passing a walled enclosure where pigs were kept, the young persons saw several plants of *Hyoscyamus niger* in flower within the enclosure, and brought two or three to their teacher. I was not a little surprised, on smelling one of the plants, to experience a sensation I had never known this plant to produce before. I felt as if I had been struck a hard blow at the top of the head by a mallet padded with wool. The sensation was only momentary, and the effects passed off immediately. Thinking that this result might be owing to some idiosyncrasy of my own nervous system, I said nothing about it, but merely asked the young people to smell the plants; and though they each described their feelings in different words, they all agreed with what is above stated. One young lady said, "Oh! it's just as if some one had struck me very hard at the top of my head without hurting me." On only one occasion since have I met with plants of this species which produced this peculiar sensation; and these were growing in a similar situation. The specimens were more dwarfish than those found by waysides round the coast. The cultivated plant, which I have examined many times, is still taller, and produces no sensation like that above described. I am anxious to know if any of your readers have noticed this property of the Henbane. RURICOLA.

LATHYRUS TUBEROSUS.

A correspondent obliges us with the following economical scrap:—

"LA TRUFFE DE LORRAINE.—On lit dans l'*Echo de l'Est* de Bar-le-Duc: On fait aujourd'hui beaucoup d'efforts pour acclimater les animaux et les végétaux exotiques. Nous nous étonnons donc avec raison qu'on n'attache pas plus d'importance à la multiplication d'un tubercule qui se produit spontanément dans nos terres argilo-calcaires, le *Lathyrus tuberosus*, connu sur les marchés de Paris sous le nom de Truffes de Lorraine. C'est le *macajon* ou *maquehon*, délices des enfants du village, qui suivent la charrue pour les récolter. Laiteux, sucré, à fécule blanche, on le mange cru dans les communes rurales; à Metz, à Pont-à-Mousson, à Langres, on le vend cuit sur les marchés, du mois de février jusqu'en avril. Nous n'en avons pas vu à Nancy, quoiqu'il croisse dans les environs. Ce tubercule, plus agréable que la pomme de terre, vaut infiniment mieux que l'igname et la patate. La plante qui le produit appartient à la famille des gesses, et se reconnaît à ses belles fleurs rouges de la forme de celle des pois."

The author of the above paragraph intimates that the merits of *Lathyrus tuberosus* have been strangely overlooked, especially in this age of material progress, wherein so many successful efforts have been made to acclimatize both foreign animals and plants. "The plant," he continues, "grows spontaneously in our marly soils, *terres argilo-calcares*, and is known in the environs of Paris as the *Lorraine Truffle*. It is the *macajon* or *maquehon*, relished by the village children, who follow the plough to pick up these tubers and collect the roots.

"This tuber has a milky, saccharine taste, with a whitish fecula, and in the rural districts it is eaten raw; but about Metz, Pont-à-Mousson, and Langres they dress and sell it in the months of February, March and April. It is more palatable than the potato, and infinitely more valuable than the Batatas." The plant, as all our readers know, belongs to the *Leguminiferæ*, and is readily known from the yellow Meadow Vetchling by its large, beautiful red flowers, which are about the size of a pea-blossom.

Note. Will any of our correspondents who have the means make experiments on the culture, produce, and economical importance of this native British plant, which grows spontaneously in Essex, and, in Adam Buddle's days, grew in Lincolnshire; and will such be so kind as to send us the results?

JOHN PARKINSON, THE HERBALIST.

Sir,—I am desirous to obtain information relative to the family and descendants (if any) of John Parkinson, the celebrated Herbalist. From biographical dictionaries we learn little or nothing about him. The inscription round his portrait in the 'Paradisus' proves him to have been born in 1567. His *arms* are given at the bottom of it: *On a chevron, between three feathers, as many mullets, a martlet for difference*. Felton (on Portraits, p. 91) states that "he died about 1645, aged about seventy-eight," but gives no authority for his statement. I am inclined to think that he was born in Nottinghamshire. The martlet in the arms proves him either a fourth son, or the descendant of one. His will, were it found, would probably give the best information to be obtained; but before one can find it, the place of his death must be ascertained.

GEORGE W. MARSHALL, LL.B.

Ward-End House, Birmingham.

HONEY-STALKS OF SHAKSPEARE.

Several plants bear the prefix *Honey*, viz. *Melanthus*, Honeyflower; *Cerinthe*, Honeywort; *Lonicera*, Honeysuckle; but neither the great poet above mentioned, nor anybody else, means by *Honey-Stalks* a plant, but only part of a plant. "Baits to fish and honey-stalks to sheep" are not of necessity entire animals or whole plants.

Several plants exude something which becomes thick and clammy when exposed to the air and heat. *Sclerochloa fluitans* is one; when young, we have often licked its stalks, and thought "there was nothing half so sweet." We have often sucked the little saccharine juice at the base of the Clover flower, which is also sweet; but the stalk yielded no sugary exudation. In Virgil's fourth Eclogue, the 30th line is as follows:—

> "Et duræ quercus sudabunt roscida mella;"

and in Georg. lib. i. 131: "Mellaque decussit foliis." The sense appears to be, "that in the golden age, to be restored under Marcellus (the hope of Rome), the Oaks should sweat honey,"—a metaphorical expression for exuberant fertility, plenty, and happiness. SIGMA.

CUCKOO-BUDS.

Sir,—In the 'Phytologist' of the present month (March, 1862), a correspondent, S. B., in reply to a former correspondent, says that the "Cuckoo-Buds" of Shakspeare ('Love's Labour Lost') are the flowers of the *Ranunculus Ficaria*, or Pilewort. He may be right, though I do not quite agree with him, but am of opinion that the "Cuckoo-Buds" have their representatives in the several species of Meadow Crowsfoot or Buttercups, since the lines referred to by S. B. say that "Cuckoo-Buds" of yellow hue

> "Do paint the *meadows* with delight."

It might be said that the *Ranunculus Ficaria* is more a flower of the hedgebank and the roadside, than of the meadow, but of course it is also found in meadows. Therefore may not the several species be combined as the

> "Cuckoo-buds of yellow hue,"

which the poet says "do paint the *meadows*," and not the hedgebank? The merely observant admirer of flowers would see little or no difference between the *R. repens*, *R. acris*, and *R. bulbosus*, more commonly known as Buttercups; and these three meadow species, together with the *R. Ficaria*, are in all probability the "Cuckoo-Buds" of the poet. I wish to say further, that not only is the Pilewort, before it expands with the sun's heat, "*like a bud closed*," but it may be said that the whole of the *Ranunculaceæ*, and, indeed, hundreds of flowers besides, are like buds closed before they expand with the sun's heat. I am not aware that the pretty little Pilewort is called "Cuckoo-Bud" by any of the early writers on botany, but I know of one modern botanical writer who affirms the poet's flower to be the *Ranunculus repens*, or Creeping Buttercup. T. S.

Burnley, March 13, 1862.

[*Query.*—Who is this modern botanist?]

Communications have been received from

John Sim; W. Ashley; Archibald Jerdon; C. J. Ashfield; S. Beisly; T. R. A. Briggs; Walter W. Reeves; James Lothian; Walter Galt; T. Moore; H. Beisly; Mrs. Merrifield; James Backhouse, jun.; W. Pamplin.

RECEIVED FOR REVIEW.

The Preston Chronicle, May 7th.
On the Value of Rheea as a Silky-looking Fibre, etc.
James Lothian's List of Florists' Flowers, etc.

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